DOCUMENT RESUME

ED 241 327 SE 044 114

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TITLE Challenging Mathematics Problems for Fifth & Sixth Graders.
INSTITUTION Area Education Agency 7, Cedar Falls, IA.
PUB DATE [80]
NOTE 28p.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Arithmetic; *Elementary School Mathematics; Estimation (Mathematics); Geometry; Grade 5; Grade 6; Intermediate Grades; Learning Activities; *Mathematical Enrichment; Measurement; *Problem Sets; *Problem Solving; Quantitative Tests; Ratios (Mathematics); Teaching Methods
IDENTIFIERS PF Project; *Word Problems (Mathematics)

ABSTRACT

A collection of word problems for fifth and sixth grade students are presented. The problems, which are divided into four sections and which get progressively more difficult in each section, include: (1) 38 problems on ratio and proportion; (2) 40 multistep problems (problems which require more than one calculation); (3) 40 problems on geometry and measurement; and (4) 40 "trial and arrow" problems (problems in which a reasonable guess is made and the results of that guess point out the correct answer or a more reasonable guess). Answers are provided immediately following each section. An introduction for the teacher suggests ways in which the problems could be presented. Five copies of a five-item, 15-minute problem-solving test for use in a local competition are provided along with an answer key and form for recording students' results. This document is part of a collection of materials from the Iowa Area Education Agency 7 Teacher Center project. (DC)

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ED241327

CHALLENGING MATHEMATICS PROBLEMS FOR FIFTH & SIXTH GRADERS

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AREA EDUCATION AGENCY 7

Cedar Falls, Iowa

Document title: Challenging Mathematics Problems for 5th and 6th Graders

Author(s): Janet Larson

Developed with funds provided by a federal Teacher Center grant contract under the provisions of the Higher Education Act of 1965.

AEA 7 Teacher Center
Waterloo, Iowa
Sept. 15, 1978 to Aug. 15, 1983

Teacher Center Policy Board Chair - Doris Mauer
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INTRODUCTION

This is a collection of various types of word problems: ratio and proportion, multi-step, geometry and measurement, and trial and arrow. These problems represent only a sample. The teacher should feel free to add to this collection or have the students add to this collection if need be.

In each of the four sections, the problems get progressively more difficult. For many of the problems in this collection, students should be encouraged to make diagrams, make charts or tables, and check results. For the trial and arrow problems, as the name indicates, a reasonable guess should be made and the results of that guess should "point out" either the answer or a more reasonable guess. Some suggestions for the presentation of the problems to the class are as follows:

Write one or two problems on the board each day to use as a warm-up. Give the students some time to work the problem(s), then discuss various ways students have solved the problem(s). The teacher can let the students work in pairs and ask one pair to give their answer for the problem.

Near the end of the class period, one problem can be written on the board for those students who may finish their assignment before the rest. Then, just before the period is over, discuss the various ways to correctly work the problem. By this method the top students can be challenged and the other students will hear problem solving skills being discussed. Some of the more difficult problems can be used.

Individual problems could be placed on 3 x 5 cards. When students finish assignments early, they can pick a card and attempt to solve the problem on it. If they answer correctly, they can write their name beside the number of that card. Then the student must make up a similar problem and write it on a card. In that way a growing supply of problems is created.

RATIO AND PROPORTION

1. Chewing gum costs 15¢ for 7 sticks. How much would 21 sticks cost?

2. Chewing gum costs 15¢ for 7 sticks. How many sticks for 75¢?

3. Every 2 weeks Lisa puts $3 into her savings account. How much money will she have saved in 16 weeks?

4. Tomatoes cost $3 for 4 kilograms. How much for 12 kilograms?

5. At a sale, records cost $5 for 4. How many records can you buy for $30?

6. Barbara had 45¢. The price of candy bars is 2 for 15¢. How many could she buy?

7. A recipe for punch calls for 2 parts ginger ale to 3 parts of fruit juice. How much ginger ale should Jim use if he uses 6 liters of fruit juice?

8. The dance decoration committee found they would need 4 boxes of sparkle for 7 ornaments. How many boxes would they need for 28 ornaments?

9. Tracy will earn $25 every 4 weeks. How many weeks will it take her to earn $75?

10. Eight cans of juice cost 96¢. How much do 4 cans of juice cost?

11. Six balloons cost 13¢. How much do 18 balloons cost?

12. Four ribbons cost 36¢. How many can you get for 18¢?

13. Grapes are 2 pounds for 78¢. How much would 6 pounds of grapes cost?

14. In a certain school district, there is 1 teacher for every 32 students. There are 1,504 students in the system. How many teachers are there?

15. Pears cost 65¢ for 2 cans. How much would 10 cans cost?

16. Sam bought 5 shirts for $65. How much would 2 shirts cost?

17. One dozen oranges cost 72¢. How much would 3 dozen oranges cost?

18. If a heart beats 13 times in 10 seconds, how many times would it beat in 30 seconds?

19. If a person sleeps 7 hours a day, how many hours would he sleep in two weeks?

20. If a person weighs 40 kg, 16 kg is muscle. If a person weighs 60 kg, how many kg is muscle?

21. If John breathes 3 times every 10 seconds, how many times would he breathe in 1 minute?

22. The cost of 6 basketball tickets is $10.50. What is the cost of 25 tickets?

23. A jet liner cruises at an average speed of 920 kilometers per hour. How far will it fly in 2½ hours?

24. Felicia's heart pumps about 18,000 liters of blood each day. How many liters does it pump in a week?

25. To make a special shade of orange paint, 3 liters of red paint are mixed with 5 liters of yellow paint. How many liters of yellow paint must be used if 60 liters of red paint are used?

26. The ratio of the length of Sam's leg to Joe's leg is 2 to 3. Sam's leg is 90 cm. long. How long is Joe's leg?

27. In one factory, 200 portable television sets are assembled every 8 hours. At this rate, how long will it take to assemble 975 portable television sets?

28. At another factory, 300 sets are assembled every 8 hours. How long will it take for this factory to assemble 975 sets?

29. The capacity of a tank is 6,000 liters. How many hours will it take to fill this tank at the rate of 75 liters every 3 minutes?

30. An investment of $725 earned an investor $58 one year. If $1,000 had been invested the same way, how much would the investor have earned?

31. A stenographer received $192.50 for 35 hours of work. At this rate, how much would this stenographer receive for 28 hours of work?

32. A recipe for dumplings calls for 3/4 cup of milk blended with 2 cups of mix. How much milk is needed for 5 cups of mix?

33. Millie, who is 150 centimeters tall, casts a shadow 60 centimeters long. How long a shadow will a 20 meter tree cast at the same time?

34. Arlette is typing a term paper. She can type at the rate of 40 words per minute. How many hours and minutes will it take her to type a 2,520 word paper?

35. A line 20 inches long is divided into three parts which have a ratio of 2 to 3 to 5. How long is each part?

36. A team played 26 games. The ratio of the games won to the games lost is 8 to 5. How many games did the team win?

37. Ronnie has a photo that is 8 cm. wide and 10 cm. long. She wants to make a smaller size print of it that will be 8 cm. long. How wide will the smaller print be?

38. At B-Mart 4 tennis balls cost $2.68. At Wendel's 3 tennis balls cost $2.16. Which store offers the better price?

RATIO AND PROPORTION

Answers

1. 45¢
2. 35 sticks
3. 24 weeks
4. $9
5. 24 records
6. 6 candy bars
7. 4 liters
8. 16 boxes
9. 12 weeks
10. 48¢
11. 39¢
12. 2 ribbons
13. $2.34
14. 47 teachers
15. $3.25
16. $26
17. $2.16
18. 39 times
19. 98 hours
20. 24 kilograms
21. 18 times
22. $43.75
23. 2,300 kilometers
24. 126,000 liters
25. 100 liters
26. 135 cm.
27. 39 hours
28. 26 hours
29. 4 hours
30. $80
31. $154.00
32. 1 7/8
33. 8 meters
34. 1 hour 3 min.
35. 4, 6, 10 inches
36. 16 games
37. 6.4 cm.
38. 4 tennis balls - 67¢ each

MULTI-STEP PROBLEMS

1. John borrowed $27. He paid back $3, $9, and $12, then he borrowed $14 more. How much does John owe?

2. In the month of April, Ann's weekly bowling scores were 392, 341 and 373 for the first three weeks. Her total 4 week score was 1,515. What was her score for the fourth week?

3. Sam made 349 telephone repairs in May and 387 in June. His total for the months of May, June and July was 979 repairs. How many repairs did he make in July?

4. Paul would like to buy a shirt for $13.98, a coat for $38.25 and a hat for $6.59. How much change should he receive from $100.00?

5. Melba bought art supplies. She bought 3 brushes for $1.59 each, a set of water colors for $3.98 and 2 pads of paper for $2.49 each. She paid with a $20 bill. How much change did she receive?

6. Mr. & Mrs. Walton figured out their expenses for a year. They spent $70 a week for food, $325 a month for their house and $2,475 for the year on clothing. How much did they spend for food, clothing and shelter in all for the year?

7. The Walton's two children went to day camp. The cost was $35 a week for each child plus 60¢ each week for milk for each child. How much did 8 weeks of day camp cost for both children?

8. Jason bought 5 baseballs for $3.59 each. How much change should he receive from a $20 bill?

9. Richard works part time. He earns $2 an hour. One week he worked 10½ hours. The next week he worked 9 3/4 hours. What did he earn those two weeks?

10. Ed bought a record album for $5.95 and shampoo for $1.98. How much change should he receive from a $10 bill?

11. Harold painted 3/10 of a house. Martin painted 2/5 of it. Jan painted the rest. What part did Jan paint?

12. In a basketball game, Bill scored 4 points in the first quarter, 10 points in the second quarter, and 9 points in the third quarter. His record is 28 points in one game. What is the least number of points he can score in the fourth quarter if he wants to break his own record?

13. Chris needed 1½ kilograms of butter for a recipe. He had 3/4 kilogram. Barbara lent him 1 1/8 kilograms. How much could he return to Barbara?

14. Ms. Keil drove 5 3/10 miles to her office. She went 3 9/10 miles to the library. Then she drove home. Her total distance was 11½ miles. How far was it from the library to her home?

15. Ralph earns $2 an hour. He worked 35¾ hours one week and 41 3/4 hours the next. How much did he earn in those two weeks?

16. Fernando earns $2.75 per hour raking leaves. He worked 4 hours on Friday afternoon, 3 hours on Saturday and 4 hours on Sunday. How much did he earn for the three days?

17. Henry earned $42 shoveling snow. He worked 4½ hours on Friday, 4 hours on Saturday and 3½ hours on Sunday. How much did he earn per hour?

18. The Corner Fruit Market ordered $67 worth of bananas, $74 worth of oranges, and $93 worth of cherries. The owner had $1,000 credit with the wholesale dealer who delivered the fruit. After the cost of the delivery, how much of a credit remained?

19. Ms. Clipper left a $25 deposit on a coat which cost $118 and 2 dresses which cost $32 each. How much does she still owe?

20. Karl bought $39.73 worth of groceries. He turned in coupons for the following amounts: $0.25, $0.15, $0.20, $0.13 and $0.40. He gave the clerk a $50 bill. How much change did he receive?

21. Miss Becker's car gets 12 km per liter of gas. She pays $0.35 for 1 liter of gas. She drives 36 km round trip to work, 5 days a week. How much does the gas she used to drive to work cost her for one week?

22. Ethel earns $18,000 a year. About how much does she earn per hour? (Use an 8 hour day, a 5 day week and 50 weeks a year.)

23. On their three day vacation, the Lincoln's drove a total of 949.9 kilometers. The first day they drove 367.2 kilometers and the second day they drove 270.9 km. How far did they drive the third day?

24. Harvey drank ½ bottle of milk on Monday, 2/3 bottle on Tuesday and ¼ bottle today. If there were 3 bottles in the refrigerator on Monday, how much milk is left?

25. The Nachey family drove to a campsite in 12½ hours. They drove 5 3/4 hours in the morning and 4½ hours in the afternoon. How many hours did they drive in the evening?

26. David took a survey: 2/5 of the people said yes, ¼ said no, 1/10 were undecided, the rest had no response. What fraction of the people had no response?

27. At the beginning of May Mrs. Johnson had $365.48 in her checking account. During the month she deposited $122.86 and $43.75. She wrote checks for $12.36, $43.97 and $25.00. What was the balance at the beginning of June?

28. A test pilot on a training mission is flying at 15,000 m. She sets the plane through the following maneuvers: dives 3,000 m, ascends 5,000 m, dives 4,500 m, ascends 4,000 m, dives 5,500 m and ascends 6,000 m. What is the altitude of the plane after the maneuvers?

29. Mr. Hadley started the month with $485 in his checking account. During the month he deposited $47, $35 and $152. He wrote checks for $56, $9, $203 and one he forgot to record. At the end of the month the balance was $337. What was the amount of the check he didn't record?

30. A store buys small cans of juice by the case. Each case has 4 cartons and each carton has 6 cans of juice. The store pays $2.88 a case and sells each can for 15¢. How much would the store make on 5 cases?

31. Chuck bought a new guitar for $49.95, a case for $12.98, a set of strings for $2.49 and two packages of guitar picks for 49¢ each. If Chuck uses the $38 he saved as a down-payment, how much will he still owe?

32. Sam works for the Mountain Calculator Company. He is paid $3.80 an hour for the first 40 hours and time and a half for overtime above 40 hours. If Jim works 46 hours during one week, how much will he earn?

33. A theatre has 155 orchestra seats priced at $9 each, 139 first balcony seats at $8 each and 120 second balcony seats at $6.50 each. If every seat is sold, how much money is collected for one performance?

34. Sally bought 75 shares of Langton stock on Monday at $4.50 per share. By Thursday, the price of the stock had fallen to $2.75 per share and Sally was advised to sell her shares. If Sally sells on Thursday, what will be her loss?

35. The Crafts Museum is open every day from 9:00 - 5:00. Admission is $1.25 for adults and $.75 for children. Each day about 178 adults and 68 children visit the museum. About how much money is collected in admission fees in one week?

36. Charles works at a beauty salon. He can see 12 customers a day. He receives an average of $2 per customer in tips.. About how much does Charles make in tips in a 5 day week?

37. Peanuts sell for $4.00 a kilogram. Cashews cost $9.00 a kilogram, and pecans sell for $10.00 a kilogram. If Harvey buys a kilogram of mixed nuts containing 500 g. of peanuts, 300 g. of cashews, and 200 g. of pecans, how much will he pay?

38. Information from a special computer can be printed at the speed of 1,600 lines per minute. If two computers are printing information at this rate, how many lines can be printed in an 8 hour day?

39. The Natural Springs Bottling Company packs bottles of mineral water in cartons that hold 12 bottles. In one day, they pack 15,552 bottles. If one delivery truck can hold 72 cartons, how many trucks are needed to ship 15,552 bottles?

40. A typist who averages 50 words per minute has an 18,000 word report to type. The typed report is expected to be 75 pages. To earn more money, should the typist charge 40¢ per page or $4.00 per hour?

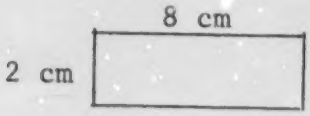
MULTI-STEP PROBLEMS

Answers

1. $17
2. 243
3. $41.18
4. $6.27
5. $10,015
6. $569.60
7. 409
8. $2.05
9. $40.00
10. $2.07
11. 3/10
12. 6 points
13. 3/8 kg.
14. 2 3/10 m.
15. $154
16. $30.25
17. $3.50
18. $766
19. $157
20. $11.40
21. $5.25
22. $9.40
23. 311.8 km.
24. 1 7/12
25. $2\frac{1}{4}$
26. $\frac{1}{4}$
27. $448.76
28. 17,000
29. $114
30. $3.60
31. $43.40
32. $186.20
33. 3,287
34. $131.25
35. $273.50
36. $120
37. $6.70
38. 1,536,000
39. 18 trucks
40. 40¢ per page

GEOMETRY AND MEASUREMENT

1. What is the area and perimeter of this rectangle?



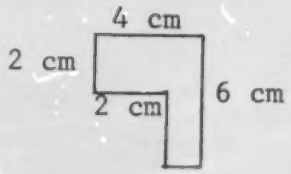
2. The perimeter of a square is 16 inches. What is the length of a side?

3. The area of a square is 36 square inches. What is the length of a side?

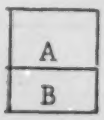
4. The area of a rectangle is 28 square centimeters, the length is 7 centimeters. What is the width?

5. The perimeter of a rectangle is 1,450 meters. If the width is 11 meters, what is the length?

6. What is the area of this shape?



7. Figure A is a square 8 centimeters on a side. Figure B is a rectangle with length 8 centimeters and width 6 centimeters. What is the perimeter of the combined shape?



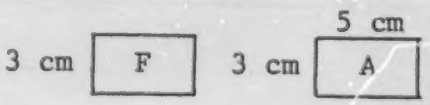
8. The perimeter of a square is 24 centimeters. Find its area.

9. The area of a square is 49 square centimeters. What is its perimeter?

10. Two squares have sides of 2 inches and 4 inches respectively. How do their areas compare?

11. Square A has a side which is twice as large as the side of square B. How does the area of A compare with that of B?

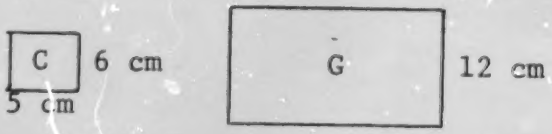
12. Figure F has an area of 4 times that of Figure A. What must be the length of Figure F?



13. The area of a playground is 60 square meters. The perimeter is 34 m. What are the length and width?

14. One of the equal sides of an isosceles triangle A is 7 cm. The perimeter of triangle A is the same as that of an equilateral triangle with each side 8 cm. How long are the sides of triangle A?

15. Figure G has an area 6 times that of Figure C. What must be the length of Figure G?



16. Rectangle T is 10 cm. X 16 cm. The length of Rectangle R is 20 cm. What is the width of R if it has the same area as T?

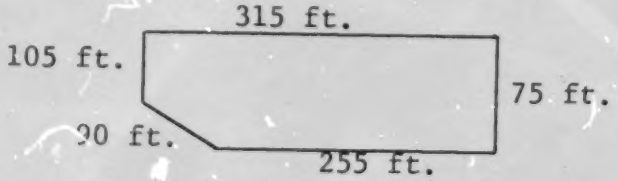
17. Rectangle Z is 5 cm. X 8 cm. The width of Rectangle W is 10 cm. What is the length of W if the area of W is twice that of Z?

18. If the length of a rectangle is halved and the width doubled, what happens to the area?

19. How much would it cost to tile a room measuring 11 meters by 18 meters if the tile costs $1.50 per square meter?

20. Mr. Jackson put a fence across the back of his property. The fence was 144 ft. long. Support posts were placed at each end of the fence as well as every 8 ft. along the fence. How many posts were needed?

21. Mr. Angelo is going to put a fence around the field shown. Every 15 feet he has a post in the ground to hold up the fence. How many posts will be needed?



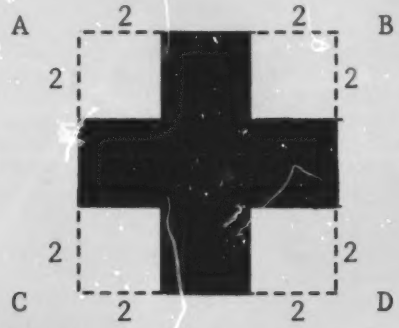
22. What is the length and width of a rectangle with an area of 24 square feet and a perimeter of 22 feet?

23. The length of a rectangle is 4 feet more than its width. What are the length and width of the rectangle if the perimeter is 40 feet?

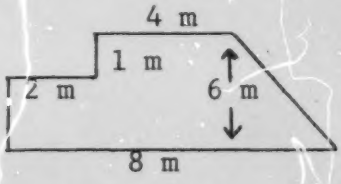
24. How many squares, each of which has an area of 9 square inches, can be cut from a rectangle 15 inches wide and 21 inches long?

25. Two squares are each 8 centimeters on a side. They overlap as shown. Find the perimeter of the shaded region, AB = 2 centimeters and BC = 5 centimeters.

26. ABCD is a square. Each unshaded region is also a square. Each dotted line is 2 inches long. Side AB is 10 inches. Find the area of the shaded region.

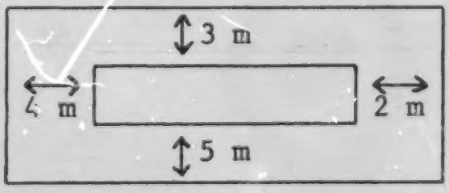


27. What is the area of this shape?

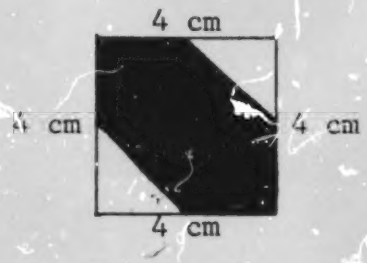


28. A gallon of paint will cover 400 square feet. How many walls 12 feet by 10 feet can you cover with 3 gallons of paint?

29. What is the total area of the patio around the swimming pool if the pool is 5 meters by 10 meters?



30. This figure is 8 cm square. What is the area of the shaded part?



31. What is the volume of a cube with an edge of 5 cm?

32. What is the surface area of a cube with an edge of 4 cm?

33. If the edges of a 2 inch cube are doubled, by how much will the volume be increased?

34. If the edges of a 3 cm cube are doubled, by how much will the surface area be increased?

35. What is the volume of a box 6 centimeters by 4 centimeters by 3 centimeters?

36. What is the surface area of a box 5 centimeters by 7 centimeters by 2 centimeters?

37. If each of the dimensions of the box in number 36 were doubled, how much greater would the volume be?

38. How many match boxes measuring 5 centimeters by 2.5 centimeters by 1 centimeter, can fit into a cube 10 centimeters on an edge?

39. A rectangular tank is 60 centimeters X 135 centimeters X 30 centimeters. If water flows into it at the rate of 3 liters (3,000 cm^3) per minute, how long will it take to fill the tank?

40. The area of one side of a rectangular box is 24 square inches. The area of one end is 20 square inches. The area of the top is 30 square inches. What is the volume of the box?

GEOMETRY AND MEASUREMENT

Answers

1. area - 16 sq. cm.
   perimeter - 20 cm
2. 4 inches
3. 6 inches
4. 4 cm
5. 714 m
6. 16 sq. cm
7. 44 cm
8. 36 sq. cm
9. 28 cm
10. 4 inches and 16 inches
11. 4 times as much
12. 20 cm
13. Width - 5 m
    Length - 12 m
14. 10 cm, 7 cm, 7 cm
15. 15 cm
16. 8 cm
17. 8 cm
18. It is the same.
19. $297
20. 19 posts
21. 56 posts
22. Length - 8 ft.
    Width - 3 ft.
23. 8 ft. by 12 ft.
24. 35 squares
25. 30 sq. cm
26. 84 sq. inches
27. 40 sq. inches
28. 10 walls
29. 158 sq. m
30. 48 sq. cm
31. 125 cm^3
32. 96 cm^2
33. 8 times
34. 4 times
35. 72 cm^3
36. 118 cm^2
37. 8 times
38. 80 boxes
39. 1 hour 21 min.
40. 120 $in.^3$

TRIAL AND ARROW PROBLEMS

1. Mary has a certain number of nickels. Harriet has one more nickel than Mary. Together they have 65¢ in nickels. How many nickels does each girl have?

2. Ann bought a pencil and a pad of paper. The pad cost 10¢ more than the pencil. Together both cost 40¢. How much did each cost?

3. I have exactly 50¢ in my pocket. There are 11 coins. What are the coins?

4. Juan spent half his money on lunch and half of the remaining at a movie. If he had 60¢ left, how much did he have to start with?

5. Find three consecutive numbers that add up to 21.

6. The sum of two numbers is 20. Their product is 96. What are the numbers?

7. Jean thought of a number. She divided it by 4. Then she added 6 to the answer. The result was 10. What number did Jean think of?

8. Joshua thought of a number. He added 3 to it. Then he multiplied that sum by 4. The result was 12. What number did Joshua think of?

9. Joe is 4 years older than Ted. The sum of their ages is 26. Find the age of each boy.

10. Billy weighs 10 pounds more than Marcia. Together they weigh 120 pounds. How much does each weigh?

11. In a field are 10 animals - some are cows and some are chickens. The total number of legs is 26. How many cows and how many chickens are there?

12. An apartment building has 7 apartments, each of which has either 3 or 4 rooms. The building has a total of 23 rooms. How many 3 room and 4 room apartments are there?

13. The sum of three consecutive even numbers is 36. What are these numbers?

14. The toll on one highway is 20¢ for passenger cars and 30¢ for cars pulling trailers. One morning the collector took in $5.40 for 22 tolls. How many cars pulling trailers paid the toll?

15. Mara has daily chores to do around the house. She is paid 50¢ per day only on the days she completes the chores. If she fails to do the chores, she pays 25¢ for that day. How many days did Mara complete the chores if she has $4.75 after 20 days?

16. Mr. Golden is 36 years old. He has two daughters. The sum of his daughters' ages is the same as his age. The product of his daughters' ages is 315. How old are Mr. Golden's daughters?

17. In the National Hockey League, a team gets 2 points for a win, 1 point for a tie, and no points for a loss. One team lost 14 of their 80 games. They ended the season with 113 points. How many games did they win?

18. There were 70 students in the lunchroom. Ten girls leave. Now there are twice as many boys as girls. How many girls were there in the beginning?

19. If 3 cats can catch 3 mice in 3 days, how many mice can 12 cats catch in 6 days?

20. Pete has 8 more apples than Hank who has 4 more than Pam. Altogether they have 25 apples. How many apples does each one have?

21. Janet has written three consecutive numbers. The sum of the first and last is 48. What are the three numbers?

22. The numerator of a certain fraction is 9 less than the denominator. When simplified, the fraction equals 2/5. What is the original fraction?

23. Mr. Ramirez has two daughters. One daughter is twice as old as the other. The sum of their ages is 33. How old are the daughters?

24. The average of 6 numbers is 17. What is their sum?

25. The average of 2 numbers is 83. Half of one is 47. What is the other?

26. Jamie bowled a 146 game and a 184 game. Her third game was 27 pins above the average of her first two games. What was her third game?

27. The average of 6 numbers is 30. Two of the numbers are 16 and 28. What is the average of the other 4 numbers?

28. A woman is 26 years older than her daughter. In five years she will be twice as old as her daughter. How old is her daughter now?

29. A 43 year old man has a son who is 16. How long ago was the father exactly 4 times as old as his son?

30. Three sisters went strawberry picking. Together they picked 18 quarts. Sue picked twice as many as Pam and Sandy picked 3 times as many as Sue. How many quarts did each sister pick?

31. Together my cat and I weigh 137 pounds. My dog and I together weigh 152 pounds. My dog and cat together weigh 39 pounds. How much do each of us weigh?

32. A boy weighs half his own weight plus 42 pounds. How much does he weigh?

33. Steve gave ½ of his records to Bill, 1/3 of the rest to Patti and 6 records, the remainder of his collection, to Bill. How many records did Steve have?

34. Dumbo ate a total of 1,000 peanuts over a period of 5 days. Each day he ate 60 more peanuts than on the previous day. How many peanuts did he eat on the first day?

35. A worker was promised $100 and a suit as his wages for a year. After 7 months he quit his job and received the suit and $20. How much was the suit worth?

36. What is the smallest number that has a remainder of three when divided by 4 and a remainder of 5 when divided by 6?

37. Dawn took a test. She received 3 points for each correct answer and lost 5 points for each wrong answer. There were 21 questions and Dawn scored 7 points. How many correct answers did she have?

38. How many numbers between 1 and 1,000 have three different digits?

39. A roll of tickets is numbered from 100 to 500. You have a winning ticket if the digits on your ticket add to 15. How many winning tickets are on the roll?

40. What is the smallest number that is evenly divisible by 1, 2, 3, 4, 5, 6, 7, 8, 9?

TRIAL AND ARROW

Answers

1. 6 and 7
2. 25¢ and 15¢
3. 5 pennies, 3 nickels and 3 dimes
4. $2.40
5. 6, 7, 8
6. 8 and 12
7. 16
8. 0
9. 11 and 15
10. 55 and 65
11. 3 and 7
12. 5 and 2
13. 10, 12, 14
14. 10 cars pulled trailers
15. 13 days
16. 21 and 15
17. 47 games
18. 30
19. 24
20. 3, 7, 15
21. 218, 219, 220
22. 6/15
23. 22 and 11
24. 102
25. 82
26. 192
27. 34
28. 21 years old
29. 7 years old
30. 2, 4, 12
31. 12, 27, 125
32. 84
33. 18 records
34. 80
35. $92
36. 11
37. 14
38. 648
39. 26
40. 2,520

Problem Solving Test

5 problem solving tests given in October, November, February March and April

5 items on each test

AEA 7 will send out 5 tests, an answer sheet, and a recording sheet one week prior to the administration date

5 or more students can take the test (additional copies of the test can be made)

15 minute time limit on the test

Teacher corrects the test and records answers on the recording sheet

Send results to Larry Leutzinger, AEA 7, Math Consultant

Problem solving booklet available containing sample problems from tests

TO: Math Teacher

FROM: Larry Leutzinger

Here is the problem solving test. The students have 15 minutes to complete it. They should write the answers on the blanks provided. After the test is finished, check the tests and record each student's score. Send this sheet to Larry Leutzinger, via AEA 7 mail by the 15th.

Recording Sheets for Problem Solving Tests

Student's Name	Test 1	Test 2	Test 3	Test 4	Test 5

Problem Solving Test 1 - 15 Minute Time Limit

Answers

1. If the 8th of the month is on Wednesday, on what day of the week is the 30th? _____

2. Marie is thinking of two numbers. When she adds the numbers the sum is 20. When she multiplies the numbers, the product is 91. What are the two numbers? _____

3. How many squares, each of which has an area of 16 square inches can be cut from a rectangle 20 inches wide and 24 inches long? _____

4. On Marty's birthday, his parents gave him $1.25 in nickels. If his mother gave him one more nickel than his father did, how many nickels did Marty's mother give him? _____

5. Malcolm LaRue likes to count things. After Halloween, Malcolm discovered he had collected 5 pieces of candy for every 3 pieces of gum. If his total was 120 pieces, how many pieces of gum did he have? _____

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Problem Solving Test 1 - 15 Minute Time Limit

Answers

1. If the 8th of the month is on Wednesday, on what day of the week is the 30th? Thursday

2. Marie is thinking of two numbers. When she adds the numbers the sum is 20. When she multiplies the numbers, the product is 91. What are the two numbers? 13, 7

3. How many squares, each of which has an area of 16 square inches can be cut from a rectangle 20 inches wide and 24 inches long? 30

4. On Marty's birthday, his parents gave him $1.25 in nickels. If his mother gave him one more nickel than his father did, how many nickels did Marty's mother give him? 13

5. Malcolm LaRue likes to count things. After Halloween, Malcolm discovered he had collected 5 pieces of candy for every 3 pieces of gum. If his total was 120 pieces, how many pieces of gum did he have? 45